Deploying Windchill on Microsoft SQL Server

Victor Gerdes  
PTC

Neeraj Joshi  
Microsoft
PTC and Microsoft: Product Architecture

Digital Product Value Chain

Clients

Integral Business Logic on a Pure Internet Architecture

Standards-based Interoperability

Seamless User Experience

PTC PLM Platform

Office Communications Server

SQL Server

Windows Server

PDS Enterprise Architecture

WL

ERP

WCF/ Web Services / BCS

Portlets

.Net/Java APIs

Messaging

Technology Adapters

Application Adapters

File & FTP Transfer

STEP

Federation

Legacy

Other PLM

Other PLM

CRM

MES

Other

© 2010

Version 1 – 1/15/10
Key Aspects of an Enterprise-Ready Database

- The amount of data created and managed throughout the lifetime of a product is enormous.
- Your database is extremely important to ensure your Product Lifecycle Management solution is running optimally.

Key Database Decision Criteria:
- Performance and Scalability
- Security
- Manageability
- Total Cost of Ownership (TCO)
SQL Server is Enterprise-Ready: Windchill Performance and Scalability

Windchill CAD Data Management Performance on SQL Server:
- Tested Windchill 9.1 M050: 100 CAD data management transactions using PTC World Car Pro/ENGINEER performance benchmark dataset (2375 files, 488 MB) in 33 areas

Results:
- An average of 10% faster than Windchill 9.1 releases on an alternate database
- An average of 35% faster than previous Windchill 9.1 releases on SQL Server
SQL Server is Enterprise-Ready: Manageability

- **Ease of installation**
  - Graphical user interface easily guides administrator
  - Process is accomplished quickly and with minimal input from administrator

- **Backup and restore**
  - Can take place in parallel, across multiple servers, allowing the administrator to take care of other priorities

- **Management tools**
  - Integrated management tool suite with support for the automation of routine tasks
  - Proactive systems for monitoring system health and performance
  - Enhanced performance tuning tools
  - Table and index partitioning to improve manageability and performance

*Tools and features simplify the process of deploying and managing*
SQL Server is Enterprise-Ready: Lowest Total Cost of Ownership

Lower Licensing Costs with SQL

- 500 - 1000 Windchill Users require 8 cores
- 2000 Windchill Users require 12 cores
- 4000 Windchill Users require 24 cores

US Dollars in thousands

- SQL EE
- Oracle EE

SQL Savings of $420K
SQL Savings of $210K
SQL Savings of $140K

Version 1 – 1/15/10
Windchill on SQL Server Customer Successes

“Quanta hopes to have better information and data management and a future-proof database, therefore the performance and scalability of SQL as the platform for Windchill is very critical. Much future expansion will have to be supported by this platform. Today Quanta has chosen SQL as the database for its PLM system, we believe SQL will also be the de facto standard database for PLM system databases in the future.”

- T.J. Fang, CIO

“At Penske Racing, we understand the importance of speed and performance. We chose PTC’s Windchill and Microsoft’s SQL Server because we wanted the best product development solution on the market and a database that offered enterprise-ready functionality and low total cost of ownership. It took us less than a week to upgrade from our previous version of Windchill running on an alternate database to Windchill 9.1 on SQL 2005. We’re already seeing performance gains, and we’re really happy with our decision.”

- Thomas German, Penske Racing Technical Director
## Deploying Windchill 9.1 on Microsoft SQL Server

Windchill on Microsoft’s SQL Server Database – Supported Since Windchill 8.0 M040 (2007)!

<table>
<thead>
<tr>
<th>Customer Description</th>
<th>Deployment Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. New Windchill Customer</td>
<td>Deploy Windchill 9.1 on SQL Server</td>
</tr>
<tr>
<td>B. Existing Windchill 9.1 -on-Oracle Customer</td>
<td>Migrate Windchill on Oracle to Windchill Microsoft SQL Server</td>
</tr>
</tbody>
</table>
| C. Pro/INTRALINK 3.4 Customer | **Step 1**: Migrate Pro/INTRALINK 3.X to Windchill on Oracle  
**Step 2**: Migrate Windchill on Oracle to Windchill on SQL Server |

### Additional Resources
- Windchill 9.0/9.1 Hardware Sizing Guide for Windows Platform
- Windchill on Microsoft SQL Server Installation Planning Guide
- Windchill Oracle to SQL Server Migration Guide

### Diagram

- **Client Tier**
  - Web Browser
  - CAD Tools
- **Application Tier**
  - Web Server
  - Windchill Application Server
  - Vaults
- **Database Tier**
  - Database Server
  - LDAP
## PTC - Microsoft Technology Road Map

<table>
<thead>
<tr>
<th>Technology Stack</th>
<th>Windchill 9.1</th>
<th>Windchill 10.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client Tier</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Browser</td>
<td>Internet Explorer 6, 7, 8</td>
<td>Internet Explorer 7, 8, 9</td>
</tr>
<tr>
<td>Client OS</td>
<td>Windows Vista, XP</td>
<td>Windows 7, Vista, XP</td>
</tr>
<tr>
<td><strong>Application Tier</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web Server</td>
<td>Apache or IIS 6, 7</td>
<td>Apache or IIS 7.5</td>
</tr>
<tr>
<td><strong>Server Tier</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDAP</td>
<td>WindchillDS &amp; Active Directory</td>
<td>WindchillDS and Active Directory</td>
</tr>
<tr>
<td>Database</td>
<td>SQL Server 2005</td>
<td>SQL Server 2008 SQL Server 2008R2</td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web meetings</td>
<td>LiveMeeting (latest)</td>
<td>LiveMeeting (latest)</td>
</tr>
<tr>
<td><strong>End-to-End</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Full Stack</strong></td>
<td>Microsoft-based only</td>
<td>Heterogeneous</td>
</tr>
</tbody>
</table>

*Future information subject to change without notice*
New Benefits with SQL Server 2008 R2 on Windows Server 2008 R2

Low TCO
- Reduce storage costs with compression for Unicode data
- Build sophisticated reports with Report Builder 3.0
- Enable self-service BI with Power Pivot

Mission Critical
- New Datacenter Edition features:
  - Up to 256 logical processors
  - Unlimited Virtualization
  - Handle more demanding applications
  - Achieve greater throughput
- Datacenter

IT Efficiency
- Master Data Management
- Dashboard views of instances and applications
- Create and store images for rapid deployment by using Sysprep
Benefit from Scalable and Predictable Performance for Physical Servers

- Improved scalability with up to 256 logical processors (determined by operating system maximum)
- Support for memory in excess of 2TB
- Support for Solid State disks
- Improved I/O performance with UCS-2 Unicode and non-Unicode data compression
- Faster, smaller backups with backup compression
- Resource utilization management with Resource Governor and Windows System Resource Manager
Improve Performance Management and Troubleshooting with Built-In Tools

Performance Data Collector

Resource Governor

SQL Server Profiler

System Resource Manager

Reliability and Performance Monitor

Faster Troubleshooting

Proactive Management

Improved Efficiency

“From the time we are alerted that we have a problem, we can identify and address the cause of it about 70 percent to 80 percent faster now that we have Performance Data Collection. This is helping us maintain our system performance.”

David P. Smith, Chief Technology
Thank You!